



# Sun™ N2000 Series Release 2.0— Release Notes

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Sun Microsystems, Inc.

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- Federal Communications Commission (FCC) — USA
- Industry Canada Equipment Standard for Digital Equipment (ICES-003) — Canada
- Voluntary Control Council for Interference (VCCI) — Japan
- Bureau of Standards Metrology and Inspection (BSMI) — Taiwan

Please read the appropriate section that corresponds to the marking on your Sun product before attempting to install the product.

## FCC Class A Notice

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

**Note:** This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy, and if it is not installed and used in accordance with the instruction manual, it may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

**Modifications:** Any modifications made to this device that are not approved by Sun Microsystems, Inc. may void the authority granted to the user by the FCC to operate this equipment.

## FCC Class B Notice

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

**Note:** This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/television technician for help.

**Modifications:** Any modifications made to this device that are not approved by Sun Microsystems, Inc. may void the authority granted to the user by the FCC to operate this equipment.

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Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

## ICES-003 Class B Notice - Avis NMB-003, Classe B

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.


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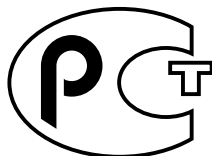
以下声明适用于运往中国且其认证标志上注有 "Class A" 字样的产品。

声明

此为A级产品，在生活环境中，该产品可能会造成无线电干扰。在这种情况下，可能需要用户对其干扰采取切实可行的措施。



## GOST-R Certification Mark





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# Sun N2000 Series Release 2.0 Release Notes

## Introduction

The *Sun N2000 Series Release 2.0 – Release Notes* supports the Sun™ N2000 Series Release 2.0 hardware and software. The Sun N2000 Series system is an intelligent application switch that provides advanced Secure Sockets Layer (SSL) acceleration with reencryption and advanced Layer 4 to Layer 7 (L4 to L7) load balancing. The Sun N2000 Series system provides these services on a flexible, virtualized basis, within the convenience of a single enclosure, and with industry-leading speed, security, and availability. The N2000 Series comprises the N2040 switch and the N2120 switch. When it is necessary to differentiate between the two switches, the model numbers are used in this manual.

This manual may refer to the Sun N2000 Series system as the “N2000 Series,” the “application switch,” the “switch,” or the “system.”

## Related documentation

For complete information about the Sun N2000 Series system, see the following documents.

Title	Part Number	Location
<i>Sun N2000 Series Release 2.0 — Introduction Guide</i>	817-7641-10	Documentation CD
<i>Sun N2000 Series Release 2.0 — Quick Installation</i>	817-7640-10	Printed, in ship kit Documentation CD
<i>Sun N2000 Series Release 2.0 — Hardware Installation and Startup Guide</i>	817-7638-10	Printed, in ship kit Documentation CD
<i>Sun N2000 Series Release 2.0 — System Configuration Guide</i>	817-7637-12	Documentation CD
<i>Sun N2000 Series Release 2.0 — System Administration Guide</i>	817-7635-10	Documentation CD
<i>Sun N2000 Series Release 2.0 — Command Reference</i>	817-7636-12	Documentation CD
<i>Sun N2000 Series Release 2.0 — Release Notes (This document)</i>	817-7639-12	Printed, in ship kit

## Conventions

### Typographical conventions

This manual uses the following typographical conventions.

Convention	Function	Example
Ctrl+x	Indicates a control key combination.	Press Ctrl+C
[Key name]	Identifies the name of a key to press.	Type <b>xyz</b> , then press [Enter]

Convention	Function	Example
Brackets [ ]	Indicates an optional argument.	show protocol telnet sessions [ipAddress <i>ipaddress</i> ]
Braces { }	Indicates a choice of parameter values; choose one. Encloses an object rule predicate or a list within an object rule created with the CLI.	ckm import paste pairHalf {privateKey   certificate}  objectRule rule1 predicate {URI_QUERY matches "information*" }
Vertical bar	Separates parameter values. Means "or."	format {pem   der   iis4   pkcs12   sun}
Monospaced regular	Screen output, argument keywords, and defined argument values.	protocol telnet adminState enabled
Monospaced italic	Variable; generic text for which you supply a value.	ntp id <i>number</i>
Monospaced bold	User input.	sun> <b>show vSwitch</b>

## CLI commands

Command-line interface (CLI) commands are not case sensitive. For example, SWITCHSERVICES is the same as switchServices. However, the text strings that you enter for argument values *are* case sensitive. For example, ENGR and engr represent two different values.

## Product Web page

For access to the most up to date information about the N2000 Series product, go to the following Web site:

<http://www.sun.com/n2000>

## Accessing Sun documentation

You can view, print, or purchase a broad selection of Sun documentation, including localized versions, at:

<http://www.sun.com/documentation>

## MIBs

The Sun N2000 Series Release 2.0 has a comprehensive set of standard and enterprise management information bases (MIBs) covering all aspects of the platform. If you plan on using SNMP to manage the Sun N2000 Series Release 2.0, you can install these MIBs on a management station at the following URL:

<http://www.sun.com/n2000>

## Third-party Web sites

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## Obtaining patches from Sun

You can obtain patches from your Sun authorized sales representative, service provider, or by downloading them from the SunSolve Online<sup>SM</sup> Web site at the following URL:

<http://sunsolve.sun.com>

For patch information instructions, see the README file that accompanies each patch.

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## Contacting Sun technical support

If you have technical questions about this product that are not answered in this document, go to:

<http://www.sun.com/service/contacting>

## Sun welcomes your comments

Sun is interested in improving its documentation and welcomes your comments and suggestions. You can submit your comments by going to:

<http://www.sun.com/hwdocs/feedback>

Please include the title and part number of your document with your feedback:

*Sun N2000 Series Release 2.0 – Release Notes*, part number 817-7639-12

## Abbreviations and Acronyms

Refer to the other Sun N2000 Series Release 2.0 documents for definitions of industry-standard and product-specific abbreviations and acronyms used in these Release Notes.

## Features and enhancements

The Sun N2000 Series system is an intelligent application switch that provides advanced Secure Sockets Layer (SSL) acceleration with reencryption and advanced Layer 4 to Layer 7 (L4 to L7) load balancing.

The following list of features primarily lists the new enhancements with this release, although details of the entire product is included when relevant. For specific details about each product feature, refer to the appropriate book in the documentation set.

## **Load-balancing features**

The N2000 Series uses traditional L4 load balancing and L5 to L7 object switching to distribute traffic across server groups. Load balancing improves network performance by distributing traffic so that individual servers are not overwhelmed with network traffic. These servers appear as a single device to the network clients. Load-balancing algorithms include round-robin, weighted round-robin, weighted random selection, and weighted hash selection.

The following list describes the load-balancing features that are available with this release.

### **Bridge Mode load balancing**

Allows traffic between clients and servers to be “bridged” across the same IP subnet and VLAN without the use of CAT. This is supported on all application service types and can be configured on a real service basis.

### **Transparent Device load balancing**

Allows load balancing of transparent devices, such as transparent caches. This is supported by the Media Module NP load-balancing engine and can be configured on a real service basis.

### **FTP load balancing**

An application-level gateway has been developed to load balance File Transfer Protocol (FTP) traffic, in both the active and passive roles. This is supported as a new application service type.

### **RTSP load balancing**

Real Time Streaming Protocol (RTSP) provides support for load balancing of streaming media content (video stream, audio stream, and text) stored on servers.

### **SMTP load balancing**

Simple Mail Transfer Protocol (SMTP) provides load balancing for SMTP traffic.

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## IMAP load balancing

Internet Message Access Protocol (IMAP) provides load balancing for IMAP traffic.

## Other load-balancing upgrades

Another load-balancing upgrade with this release is the ability to increase customization of HTTP processing by replacing the former “forwarding policy” with four more granular policies:

- **Request Policy** — Replaces the forwarding policy for HTTP request processing.
- **Response Policy** — Defined for HTTP response processing and allows for more complete “sorry service” rules to redirect or send on-box HTML page for non-responsive requests.
- **Request Transform** — Defined to transform (add or remove) HTTP headers in HTTP requests and allows header insertions, such as source IP address, cipher strength, and customer headers.
- **Response Transform** — Defined to transform (add or remove) HTTP headers in HTTP responses and allows custom headers to be inserted by the switch in HTTP responses. Also allows “server cloaking,” which is a removal of server signature from HTTP headers.

Other types of load balancing features available include HTTP, HTTPS, L4SLB, S4SLB\_ADV, and L4SLB\_SSL.

## Server health checks

The N2000 Series provides Out-of-Band, in-line, and passive server health checks. By using these health checks, the N2000 Series determines which servers, in a service group, are unavailable for load-balancing and switching applications. If a server is unresponsive, the N2000 Series temporarily removes the server from the service group, leaving the remaining servers in the group to handle the traffic load. When distributing the traffic load, the N2000 Series prefers those servers with faster response times to health check probes. When a subsequent probe determines that the server is available, the N2000 Series places the server back into the load-balancing algorithm.

The following server health checks are new with this release:

- FTP health check

- RTSP health check
- SMTP health check
- IMAP health check
- Scripted health check
- RADIUS health check

Other types of available health checks include ICMP, TCP, HTTP, LIST, DNS\_UDP, DNS\_TCP, RAW\_UPD, RAW\_TCP, SCRIPT, and POP3.

## **Management enhancements**

### **RADIUS user authentication**

The Sun N2000 Series now supports the RADIUS authentication standard for user authentication and authorization. This option provides an additional choice for authentication, so you now can choose TACACS+ or RADIUS.

### **Statistics reset facility**

You can now clear each statistics page during each session, which enables you to troubleshoot information easily. You can reset the statistics in either the CLI or the Web interface and the reset does not alter data. It merely changes the data display for you for that particular session. Resetting statistics per session also allows you to avoid problems with SNMP monitors and multiple user access situations.

### **OOB port statistics**

Additional statistics for the Out-of-Band (OOB) ports are available with this release.

### **HP OpenView support**

You can now use an SNMP-based management tool, such as HP OpenView, with the Sun N2000 Series.



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### **First-time setup script**

This option allows you to use the setup script anytime you are using the `setup` command. You will be prompted to use this script the first time you log in, and each subsequent time until you save the configuration. This script prompts you to update configuration options such as user administration, management of IP networks, and SNMP settings.

### **Event management filters**

This option includes notifications from a system component indicating that a condition has changed or an error has occurred. The N2000 Series logs events to an internal event log and also supports using the syslog protocol (RFC 3164) to send event messages to remote syslog servers. There are four types of default filter profiles: `defaultLog`, `defaultFile`, `defaultSyslog`, and `defaultTrapd`.

## **Other features**

### **Dynamic outbound NAT for UDP**

Dynamic NAT translates multiple private addresses to a single public address. Thus, one global public address can be used for a range of real IP addresses in the backend (real servers) network. Dynamic NAT now supports UDP protocols. Dynamic NAT only applies to outbound traffic from real servers to the Internet.

### **Shared Web tier**

Allows real services and services to be re-used with a number of virtual services.

### **Dynamic expiration of cookies**

Allows switch-managed cookies to expire based on a dynamic timeframe (such as two hours from the start of a session) rather than a certain predefined date.

### **SYN cookies**

Allows TCP SYN cookies to be used to mitigate Denial of Service (DOS) attacker.

**ACLs on the OOB**

Provides support for ACLs on all ports, including the Out-of-Band port.

**Standby servers**

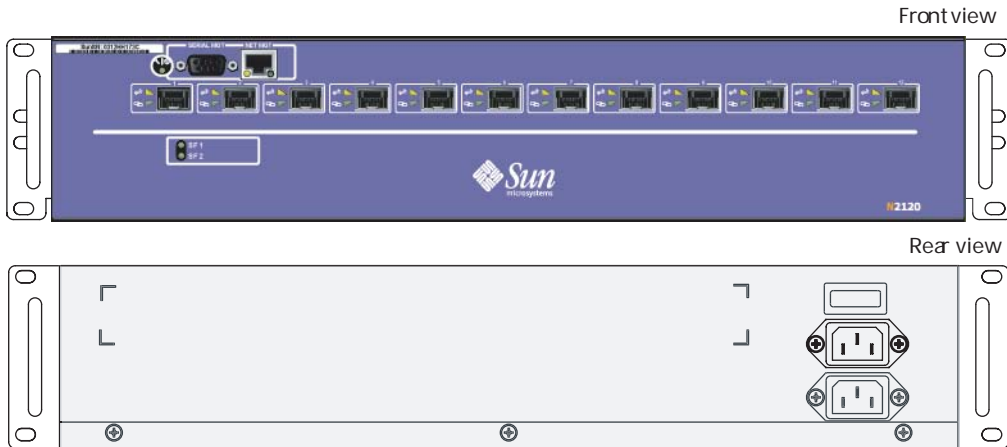
Allows real services to be defined in a standby list; these servers are only used if a primary server fails.

## Supported hardware

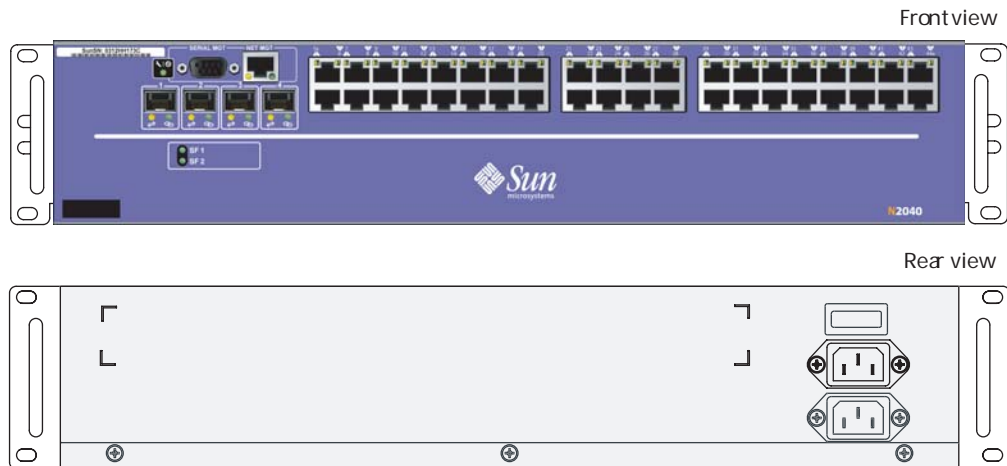
The N2000 Series is available in two versions: the N2120 and the N2040. The Sun N2120 platform provides 12 small form-factor pluggable (SFP) Gigabit Ethernet (copper or fiber) ports. The Sun N2040 provides 40 10/100-Mbps ports and 4 small form-factor pluggable (SFP) Gigabit Ethernet (copper or fiber) ports. Both systems are rackmountable and operate on standard AC voltages (115 or 230 VAC) in either redundant or non-redundant power configurations.

Figure 1 illustrates the Sun N2120, and Figure 2 illustrates the Sun N2040.

**Figure 1. Sun N2120 Chassis**



**Figure 2. Sun N2040 Chassis**



## Interface support

### Ethernet ports

Ethernet 10/100BASE-T ports require standard UTP/STP network cable, Category 5 or 5E, with RJ-45 8-pin modular connectors.

Gigabit Ethernet ports require SFP LC fiber-optic connectors on multimode fiber-optic cable.

### Console and Ethernet management ports

The console port requires a standard EIA-232 (RS-232) data terminal equipment (DTE) crossover serial cable with a DB-9 connector.

The 10/100-Mbps management port requires a standard UTP/STP network cable, Category 5 or 5E, with an RJ-45 8-pin modular connector.

Configure the terminal emulator for a VT100 emulation (or allow autodetection) and then set to 9600 baud, 8 data bits, no parity bit, and 1 stop bit (8/N/1).

## System software and storage

The system software is loaded on the N2000 Series internal flash disk when shipped from Sun.

When released by Sun, software upgrades are available at the N2000 Series section of the Sun Web site at the following URL:

`http://www.sun.com/n2000`

When released by Sun, patches are available from the SunSolve Online<sup>SM</sup> Web site at the following URL:

`http://sunsolve.sun.com`

Refer to the section, “Using previous versions of the software”, for information on earlier software versions of the N2000 Series.

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## System installation and startup

System startup is performed after you install the chassis into a rack or set it on a flat surface and attach a cable to the system. You must attach a local terminal to the system console port. When ready, turn the system on using the POWER ON/OFF switch on the back of the chassis. A first-time startup takes approximately three minutes.

Refer to the *Sun N2000 Series Release 2.0 – Hardware Installation and Startup Guide* for complete information on performing a system hardware installation.

## System configuration file

The system configuration uses the `cdb.dat` file, located on the system disk directory `/ft10/config`. Refer to the *Sun N2000 Series Release 2.0 – System Administration Guide* for information on managing this file.

## Using previous versions of the software

If you are using a previous version of the N2000 software and require an upgrade, go to the following Web site for upgrade information:

<http://www.sun.com/n2000>

## Management support

Administrators can use multiple management tools to support the Sun N2000 Series in a network. These tools include:

- Command-line interface
- Web interface
- SNMP

## Command-line interface

The command-line interface (CLI) uses an industry-standard design that allows you to configure and manage the N2000 Series by entering keyboard commands. You access the CLI over a direct console connection to the RS-232 port on the front of the system, or over a Telnet or SSH connection. A connection to the CLI is indicated by the user name and password prompts.

## Web interface

The Web interface is a graphical user interface that allows you to configure and manage the Sun N2000 Series.

The following operating systems and Web browsers have been tested with Version 2.0.

### Operating systems

- Windows 98, 2000, and XP
- Macintosh OS X v 10.1
- Red Hat Linux release 7.1
- Solaris™ 9 4/03

### Web browsers

- Microsoft Windows
  - Internet Explorer 5.5 and 6.x
  - Netscape™ 6.2, 7.x
  - Mozilla™ 1.x
  - Firefox 1.0
  - Opera 6.x and 7.x
- Macintosh
  - Internet Explorer 5.2
  - Netscape 6.2
  - Mozilla 1.x

- Firefox 1.0
- Red Hat Linux
  - Mozilla 1.x
  - Opera 6.x
- Solaris
  - Netscape 7.x
  - Mozilla 1.x
  - Firefox 1.0

The minimum Macromedia Flash version required is Version 6.0.65.0. Newer versions of Flash (such as 7.x) will also work.

The Web interface supports almost all management capabilities provided by the CLI. The Web interface also supports additional functionality, such as graphing, advanced editors, and monitoring tools.

## **SNMP**

The Sun N2000 Series Release 2.0 supports the following SNMP versions: SNMP v1, SNMP v2c, and SNMP v3. Sun enterprise MIBs are available on the N2000 Series Technical Documentation CD in the MIBs section.

# **Configuration scaling**

## **Virtualization and management**

System vSwitch with:

- Management vRouter
- Four additional vRouters (shared and three additional vRouters)
- With optional virtualization and license key, up to 10 operator-defined vSwitches, each with their own default vRouter
- 100 user accounts (used for login access to the switch)
- 10 concurrent CLI sessions

- 10 concurrent HTTP management sessions

### **L2 to L3 scale**

- Ports per LAG: 16
- LAGs: 22
- Ports or LAGs per VLAN: 44
- VLANs: 4000 per N2000, 512 per vSwitch
- ARP entries per vRouter: 3000
- 4 ACLs per vRouter: 256 rules per ACL
- IP interfaces per vRouter: 128
- Static routes per vRouter: 2000
- MAC entries per system: 16,000

### **Virtual service configuration**

- Maximum number of virtual services per vSwitch: 512
- Service groups per vSwitch: 512
- Real hosts per vSwitch: 1024
- Real services per vSwitch, each able to be health-checked: 1024
- Maximum number of real services in a service group: 1024
- Forwarding policies per vSwitch: 1000
- Object rules per vSwitch: 1000
- Configurable health checks per vSwitch, up to one per service group: 512
- Active health checks per vSwitch, up to one per real service: 1024
- Keep-alives per real service (1 probe or 1 list of up to 5 HTTP probes): 1
- 1024-bit certificates per vSwitch, up to one per virtual service: 512



**Note:** The scaling numbers outlined above are individually achievable, but maximum configurations combining all of the scale factors are not achievable.

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# Known problems, restrictions, and limitations

This section describes the known problems, restrictions, and limitations in Release 2.0. For tracking purposes, an internal Sun reference number is included at the end of each item in this section.

## System startup

- After rebooting with a previously saved configuration, a vSwitch's operational status may display as “starting” instead of “UP.” There may also be network processor warnings shown in the syslog, similar to the following:  

```
<132> Nov 11 14:38:40 2004 v0 IP.system.shared  
[0/10167] [WARNING]: vlan.55failed to add IP rule  
55.55.55.1 priority 1 to network processor. (5241)
```
- When viewing the system vSwitch, the operational status field may display “starting.” This can be ignored. (5788)

## CLI

- When exporting a running configuration, you must specify the following parameters in order for the configuration to play back correctly on the switch:  

```
show runningConfig defaultValues true nameValuePairs  
true. (5846)
```

## Web interface

- Most browsers exhibit a security issue regarding the way basic authentication is implemented by continuing to send the old credentials after an error message is received. To avoid this issue, you must close the browser window used to connect to the switch to maintain security and prevent unauthorized access. Mozilla is the only browser that does not exhibit this issue. (1199)
- Online Help requires JavaScript™ enabled on your Web browser. (2104)
- Displaying statistics using line graphs will preserve all history of graphed data, which will continuously consume memory on your PC if left unattended. (2299)

## **Syslog**

Although most Syslog messages are time-stamped in local time, repeat events are currently time-stamped in GMT time. (5007)

## **SNMP**

The SNMP MIBs shipped with this release have some incorrect and omitted descriptions. Refer to the *Sun N2000 Series Release 2.0 – System Configuration Guide* for complete MIB descriptions or the section entitled MIBs in this document.

## **Secure Shell (SSH)**

F-Secure SSH client version 5.2 cannot connect with this release. This issue may be fixed in newer versions of F-Secure. (1349)

## **FTP**

The FTP client on the switch is not accessible through the Web interface. The FTP client must be used within the CLI. (3778)

## **Ports**

- The Ethernet management port will come up as 10/half if set to autonegotiate and connected to an endstation that is not autonegotiating and fixed at 100/full or 100/half. (1211)
- When copper gigabit GBICs are installed, the CLI will display the configuration as fixed 1000M, full-duplex. However, the copper gigabit interface is actually set to autonegotiation, advertising 1000M, full-duplex only. (5686)
- If you import a running configuration file that has port mirroring enabled information will not be properly replayed. The port mirror configuration will have to be manually configured. (5725)
- The default for gigabit ports is hard coded at 1000M, full-duplex for fiber SFPs. The gigabit standard calls for all gigabit ports to be set to autonegotiation. The copper gigabit SFPs do autonegotiate by default. (5812)
- Port mirroring will only mirror traffic received by a port (in), even if it was configured to mirror transmit (out or both) traffic. (5793)

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## Jumbo frames

Jumbo frames directed to the switch IP address are dropped. (1665)

## IP routing

- Directed broadcasts are not forwarded across IP interfaces. (2059)
- The on-board `traceroute` command fails in an on-board IP interface. The ICMP `ping` command can be used. (5092)

## ICMP

The switch does not always properly respond to ICMP Address Mask requests properly. (3946)

## OSPF

OSPF type 2 AS external routes always use a metric of 1 regardless of the configured metric. (5693)

## Access control lists (ACLs)

- ACLs will not block traffic that is generated internally within the N2000 Series application, such as RIP advertisements, outgoing Spanning Tree BPDUs, etc. (2225)
- The number of ACLs that can be applied to interfaces across the switch will vary with the complexity of the rules that are applied. If the internal table limits are exceeded, an error will be generated and reported through the syslog facility.
- When creating ACLs, you must create all the rules in the `accessList` before adding it to an `accessGroup`. You must also remove `accessList` from and `accessGroup` before modifying any of the rules. If you do not follow this process, the ACL will not function properly. (5821)

## Routing Information Protocol (RIP)

The switch will erroneously add a host route to the route table based on a received RIP update when the switch has already received a RIP update containing a route with a short mask for the same gateway. This compliance problem should have no negative network impact. (2457)

## Operational considerations

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### Statistics

- IP statistics will occasionally show up as N/A when an IP interface is being flooded with bad packets. (3666)
- Spanning Tree Protocol BPDUs are not counted in VLAN interface statistics. (1055)

### Load balancing

- Opera Web browsers continue to request TCP data even when receiving a TCP-RST. This can cause the browser to appear hung. (2844)
- UDP load balancing (including RADIUS and DNS) does not support frames with IP options. (4469)
- UDP services (TFTP and NFS) do not work in a Dynamic NAT configuration. These services must be configured static NAT only. (5611)
- With request and response transforms, only defined headers can be used in the “Delete HTTP Header” field. The list of defined headers can be found in the *Sun N2000 Series Release 2.0 – System Configuration Guide*. If a non-defined header is used, compilation warnings will be triggered and the virtual service will show an “Oper Message” of “Object rule compilation error.” (5800)

## Operational considerations

### Fiber-optic transceivers

Sun has tested the fiber-optic ports on the front of the system with the following transceivers listed by vendor and vendor part number.

- Picolight PL-XPL-00-S13-05
- Stratos SPLC-20-4-1-B
- Finisar FTRJ-8519-7D

You can use other transceivers, but only the ones listed above have been fully tested. If required, these transceivers can be purchased from Sun or directly from approved vendors.

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## Documentation updates

This section describes updates in the Sun N2000 Series Release 2.0 documentation. Refer to the Sun Web site for the most recent versions of documentation.

The official name of the product is the Sun Secure Application Switch - N2000 Series. Throughout the documentation, the product is referred to as the Sun Application Switch and the Sun N2000 Series.

### Manuals

With this release, all documents have been updated to reflect the new functionality.

- There is a new document with this release, entitled *Sun N2000 Series Release 2.0 – Introduction Guide*, which provides a high-level overview of the product and is available in six languages.
- In the “Related Documentation” section of the Preface, the part number have changed and have been updated from -10 to -12 for the *Sun N2000 Series Release 2.0 – Command Reference*, *Sun N2000 Series Release 2.0 – System Configuration Guide*, and *Sun N2000 Series Release 2.0 – Release Notes*.

### Introduction Guide

- In all versions of the Introduction Guide, there is no description of the Feedback button that exists in the Web interface. This button description should be located in the Introduction Guide, in the “Additional Help features” section within the Help section of Chapter 2. When you click this button, you are brought to a Sun Documentation Feedback Web page.

### Quick Installation

- In Step 2, the text states that you can “Install the chassis into a 4-post rack.” The text should also state that you can install the chassis into a 2-post rack as well.

### Command Reference

- When tabular output is produced by a CLI `show` command, a dashed line separates the table headings from the data. The dashed line is not shown in the examples in the *Sun N2000 Series Release 2.0 – Command Reference*.

## Online Help

With this release, the online Help has been updated to reflect the new functionality.

- Opera 7.x (in Solaris and Windows environments) does not display Help correctly or support correct navigation between topics.
- The Table of Contents in the Web interface does not expand or collapse if you are using any of the Opera 6.x point releases. If you need to use the Table of Contents for the Help, you must use either Opera 7 or the supported versions of Mozilla and Internet Explorer. The context-sensitive Help and Help indexes work properly in Opera 6.x point releases.